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INT CL<sup>7</sup> A45D, A47J, A47K

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(54) Abstract Title

Spatula for use in hair removal

(57) A spatula (1) for the removal of a cosmetic composition from a part of the body. The spatula (1) comprises a handle portion (3) and an operative portion (2). The operative portion (2) includes an operative edge (2a) which, in use, is scraped along part of the body. The spatula (1) is formed as a unitary component in a material of sufficient rigidity that the operative edge (2a), in use, removes the composition, and of sufficient flexibility that the operative edge (2a), in use, conforms to the contours of said part of the body. The spatula may be moulded from a synthetic plastics material such as polyethylene. The handle 3 may include an array of domed protrusions 5 on a surface and may have an arcuate form. The operative portion 2 is also arcuate but opposite to the handle. The handle 3 and operative portion 2 are separated by a hinge 4.

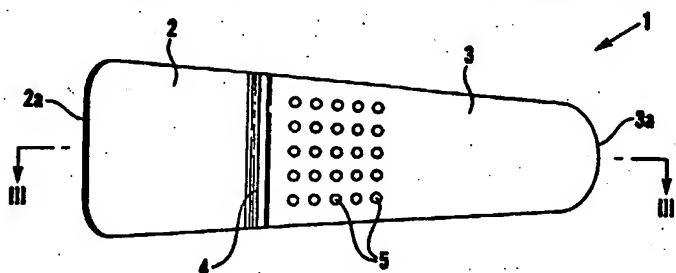


Fig.1

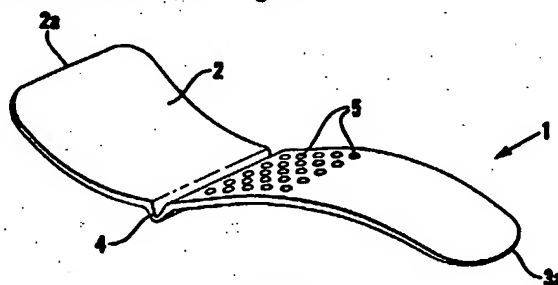


Fig.2

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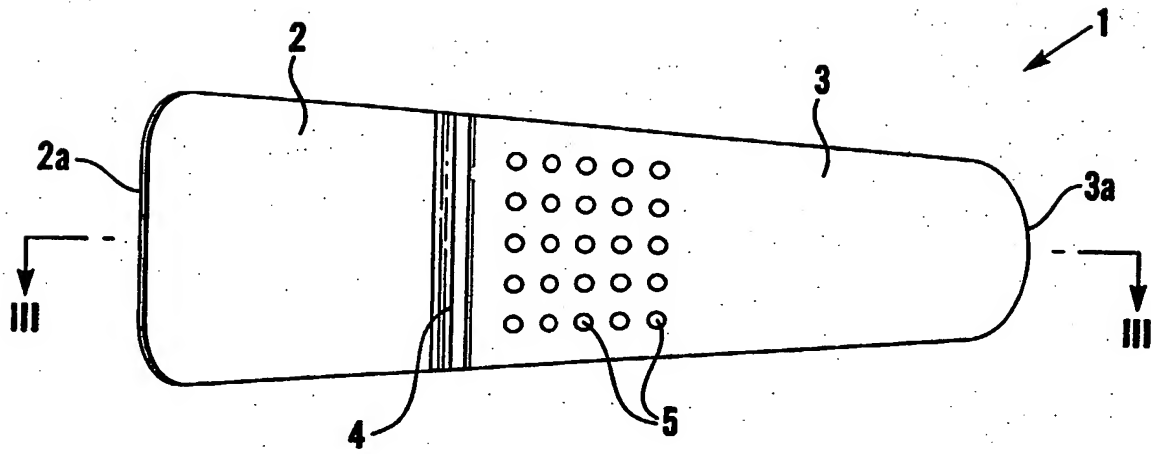


Fig. 1

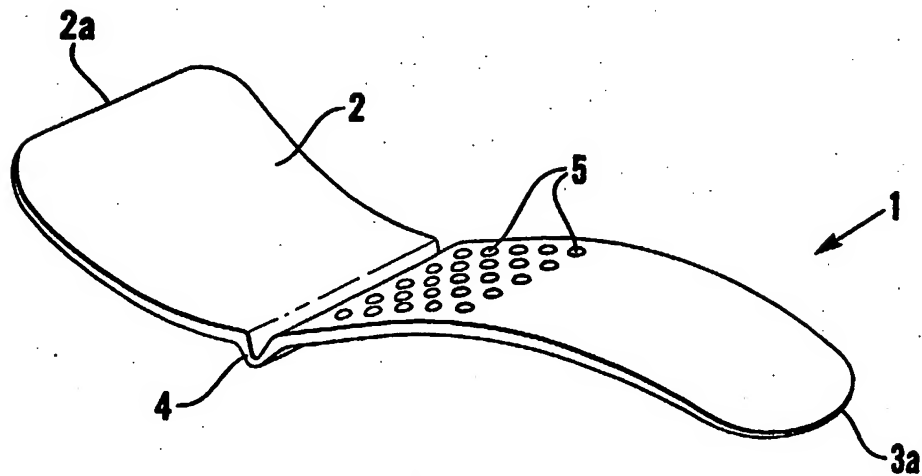


Fig. 2

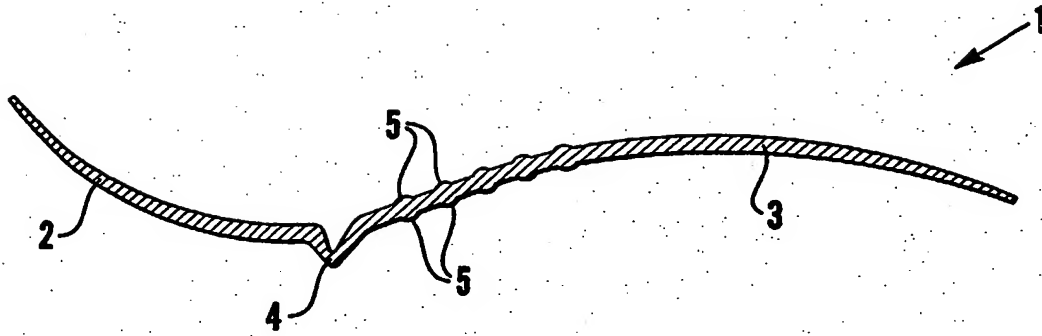


Fig. 3

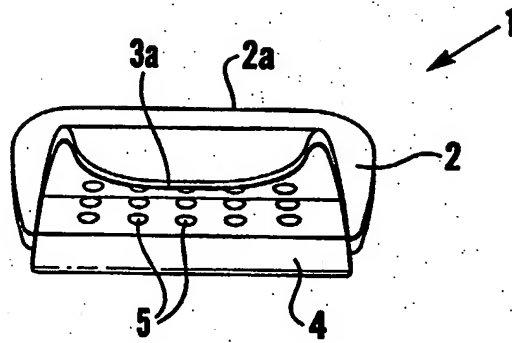


Fig. 4

Title – Improvements in Spatulas

This invention relates to a spatula for the application and/or subsequent removal of cosmetic compositions from the skin. The spatula is particularly useful in relation to the application and/or removal of hair removal compositions from the skin.

Hair removal compositions are widely used by women for the removal of unwanted hair from areas of the body, notably the legs. The use of such compositions may be preferable to alternative methods of hair removal such as waxing and shaving. The method of using a hair removing composition generally comprises applying the composition to the area of skin having unwanted hair, leaving for a sufficient length of time for the unwanted hair to become liberated from the skin, and removing the composition and hair from the skin. A spatula is commonly used to remove the composition and unwanted hair from the skin by scraping the spatula along the skin. The advantage of using a spatula is primarily that the hair is removed from the skin more effectively than with other methods such as using cotton wool or tissues. In addition, a spatula may also be used to apply the composition to the skin initially.

Spatulas of different shapes have been developed in a variety of forms and a variety of materials. For example, spatulas have been produced that are part formed in a rigid plastics material and part formed in a more flexible elastomeric material, the latter part being applied, in use, to the skin. A significant disadvantage of these spatulas, however, is that they are expensive to produce. As a spatula is normally supplied with each pack of hair removal composition and generally discarded after use, the cost of such a spatula may lead to a substantial increase in the cost of the product.

Other spatulas have been produced by injection moulding as unitary components in relatively rigid plastics material. Such spatulas are inexpensive, but the rigidity of the spatula may result in only a relatively small area of contact between the

operative edge of the spatula and the skin to which it is applied, particularly when that area of skin is on a highly curved and bony part of the body (eg the shin).

The area of contact may be increased by increasing the force with which the spatula is applied to the skin, but this may be uncomfortable or even painful for the user.

There has now been devised an improved form of spatula that overcomes or substantially mitigates the above-mentioned and/or other disadvantages of the prior art.

According to the invention, there is provided a spatula for the removal of a cosmetic composition from a part of the body, the spatula comprising a handle portion and an operative portion, said operative portion including an operative edge which, in use, is scraped along said part of body, wherein the spatula is formed as a unitary component in a material of sufficient rigidity that the operative edge, in use, removes the composition, and of sufficient flexibility that the operative edge, in use, conforms to the contours of said part of the body.

The spatula according to the invention is advantageous primarily because it is more effective than otherwise similar spatulas formed in more rigid material at removing the composition from the skin and is less expensive to produce than spatulas that are formed in more than one material. The increased effectiveness over similar, more rigid spatulas is surprising in that rigidity might be considered to be a prerequisite for an effective scraping action of the spatula. It is believed that the increased effectiveness of the spatula according to the invention is achieved because the spatula can conform to the contours of the part of the body along which it is scraped, maximising the area of skin that is in close contact with the operative edge. Importantly, the spatula also maintains sufficient rigidity as a whole, including the operative edge, to effectively remove the cosmetic composition. Where the composition is a hair removing composition then the spatula is effective in removing that composition along with the unwanted hair.

As well as, or instead of, being used to remove the composition from the skin, the spatula may be used to apply the composition to the skin.

5 The spatula is preferably formed by a moulding process, most preferably injection moulding.

The spatula is preferably formed in a synthetic plastics material. One suitable material is polyethylene, especially a low density polyethylene, and most preferably linear low density polyethylene. One particular material that is suitable  
10 is the linear low density polyethylene referred to as Escorene® LL-6101 LLDPE (ExxonMobil Chemical).

Suitable spatula materials may have a Flexural Modulus of less than 1.0GPa, more preferably less than 0.5GPa and most preferably less than 0.25GPa. The  
15 lower limit for the Flexural Modulus of the spatula material is preferably 0.1GPa and most preferably 0.2GPa.

Suitable spatula materials may have a Shore D Hardness (15sec) of greater than 20, more preferably greater than 30 and most preferably greater than 40. The  
20 spatula material preferably has a Shore D Hardness (15sec) of less than 65, more preferably less than 55 and most preferably less than 45.

Preferred spatula materials have a Flexural Modulus in the range 0.1GPa to 0.5GPa, particularly in the range 0.2GPa to 0.25GPa, for example 0.21GPa, and  
25 a Shore D Hardness in the range 30 to 55, particularly in the range 40 to 45, for example 41.

Flexural Modulus is a measure of a material's ability to resist deformation under a load. The test methods most commonly used to measure this property are  
30 ISO 178 and ASTM D790. Shore D Hardness (15sec) is a measure of the resistance of the material towards indentation. The test methods most commonly

used to measure this property are ISO 868 and ASTM D2240 00. Each of these properties therefore define the flexibility/rigidity of a material.

5 The spatula is preferably elongated, having a length greater than its width, and is most preferably generally trapezoidal in shape. The thickness of the spatula is preferably in the range 0.5mm to 3mm. The operative edge is preferably substantially straight, preferably with a width in the range 15mm to 55mm, especially in the range 25mm to 45mm. The spatula is preferably between 80mm and 150mm in length, especially between 100mm and 130mm. The corners of  
10 the spatula are preferably radiussed.

When viewed from the side, the operative portion may arc, preferably with a radius in the range 20mm to 60mm, especially in the range 35mm to 45mm. The handle portion may arc, preferably with a radius in the range 60mm to 100mm,  
15 especially in the range 75mm to 85mm. The operative portion and handle portion may arc in opposing directions. The handle portion and operative portion may be separated by a hinge. The hinge is preferably a lateral indentation across the width of the spatula. The handle portion preferably includes formations that facilitate gripping of the handle portion by a user. Such formations may take the  
20 form of an array of domed protrusions.

The invention will now be described in greater detail, by way of illustration only, with reference to the accompanying drawings, in which

25 Figure 1 is a plan view of a spatula according to the invention;

Figure 2 is a perspective view of the spatula;

Figure 3 is a sectional view on the line III-III in Figure 1; and

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Figure 4 is an end elevation of the spatula.

Referring firstly to Figure 1, a spatula according to the invention is generally designated 1. The spatula 1 is preferably formed in linear low density polyethylene (LLDPE), such as that referred to as Escorene® LL-6101 LLDPE (ExxonMobil Chemical), as a unitary component by injection moulding.

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The spatula 1 is of generally trapezoidal shape when viewed in plan view, as shown in Figure 1. The spatula 1 is separated into an operative portion 2 and a handle portion 3 by a flexible hinge 4 that is formed laterally across the spatula 1. The handle portion 3 is about twice the length of the operative portion 2. The spatula 1 has an approximate length of 115mm and reduces gradually in width from approximately 40mm at the operative edge 2a of the operative portion 2 to approximately 25mm at the rear edge 3a of the handle portion 3. The corners of the spatula 1 at the operative edge 2a and the rear edge 3a are radiussed such that the operative edge 2a has an extensive central portion that is flat and the rear edge 3a is substantially curved.

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Referring now to Figure 2 and Figure 3, the spatula is of generally uniform cross-section throughout its width. The spatula has a thickness of approximately 2mm at its centre which gradually reduces to a thickness of approximately 0.6mm at the operative edge 2a and 1mm at the rear edge 3a. The operative portion 3 arcs such that the upper surface of the operative portion 3 is concave in the longitudinal axis, when viewed as in Figure 2, with a large radius such that the operative portion 3 is relatively flat. The handle portion 3 arcs such that the upper surface of the handle portion 3 is convex in the longitudinal axis, again when viewed as in Figure 2, with a larger radius than the operative portion 2.

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The hinge 4 is a lateral indentation across the entire width of the spatula 1 and is of V-shaped cross-section. The upper and lower surfaces of the handle portion 3 near the hinge 4 include a plurality of domed protrusions 5 in a matrix arrangement, which together constitute a grip.

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With the user holding the handle portion 3, the hair removing composition is applied to and spread evenly over the area of skin having unwanted hair using the operative portion 2 of the spatula 1. The hair removing composition remains covering that area of the skin for a sufficient length of time in order for the

5 unwanted hair to become liberated from the skin. The operative edge 2a of the spatula 1 is then scraped along the skin in an orientation such that the hair removing composition and the unwanted hair collect on the concave surface of the operative portion 2. The hair removing composition and unwanted hair that is collected on the operative portion 2 is removed from the spatula 1 when

10 necessary using a tissue or the like.

Claims

1. A spatula for the removal of a cosmetic composition from a part of the body, the spatula comprising a handle portion and an operative portion, said  
5 operative portion including an operative edge which, in use, is scraped along said part of body, wherein the spatula is formed as a unitary component in a material of sufficient rigidity that the operative edge, in use, removes the composition, and of sufficient flexibility that the operative edge, in use, conforms to the contours of said part of the body.
- 10 2. A spatula as claimed in Claim 1, wherein the spatula is formed by a moulding process.
3. A spatula as claimed in Claim 2, wherein the spatula is formed by injection  
15 moulding.
4. A spatula as claimed in any preceding claim, wherein the spatula is formed in a synthetic plastics material.
- 20 5. A spatula as claimed in Claim 4, wherein the spatula is formed in polyethylene.
6. A spatula as claimed in Claim 5, wherein the spatula is formed in a low  
25 density polyethylene.
7. A spatula as claimed in Claim 6, wherein the spatula is formed in a linear low density polyethylene.
8. A spatula as claimed in Claim 7, wherein the spatula is formed in  
30 Escorene® LL-6101 LLDPE (ExxonMobil Chemical).

9. A spatula as claimed in any preceding claim, wherein the spatula material has a Flexural Modulus of less than 1.0GPa.

5 10. A spatula as claimed in Claim 9, wherein the spatula material has a Flexural Modulus of less than 0.5GPa.

11. A spatula as claimed in Claim 10, wherein the spatula material has a Flexural Modulus of less than 0.25GPa.

10 12. A spatula as claimed in any preceding claim, wherein the spatula material has a Flexural Modulus greater than 0.1GPa.

13. A spatula as claimed in Claim 13, wherein the spatula material has a Flexural Modulus greater than 0.2GPa.

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14. A spatula as claimed in any preceding claim, wherein the spatula material has a Shore D Hardness (15sec) of greater than 20.

20 15. A spatula as claimed in Claim 14, wherein the spatula material has a Shore D Hardness (15sec) of greater than 30.

16. A spatula as claimed in Claim 15, wherein the spatula material has a Shore D Hardness (15sec) of greater than 40.

25 17. A spatula as claimed in any preceding claim, wherein the spatula material has a Shore D Hardness (15sec) of less than 65.

18. A spatula as claimed in Claim 17, wherein the spatula material has a Shore D Hardness (15sec) of less than 55.

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19. A spatula as claimed in Claim 18, wherein the spatula material has a Shore D Hardness (15sec) of less than 45.

20. A spatula as claimed in any preceding claim, wherein the spatula material has a Flexural Modulus in the range 0.1GPa to 0.5GPa.

5 21. A spatula as claimed in Claim 20, wherein the spatula material has a Flexural Modulus in the range 0.2GPa to 0.25GPa.

22. A spatula as claimed in any preceding claim, wherein the spatula material has a Shore D Hardness (15sec) in the range 30 to 55.

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23. A spatula as claimed in Claim 22, wherein the spatula material has a Shore D Hardness (15sec) in the range 40 to 45.

15 24. A spatula as claimed in any preceding claim, wherein the spatula is elongated, having a length greater than its width.

25. A spatula as claimed in any preceding claim, wherein the spatula is trapezoidal in shape.

20 26. A spatula as claimed in any preceding claim, wherein the spatula has a thickness in the range 0.5mm to 3mm.

27. A spatula as claimed in any preceding claim, wherein the operative edge is substantially straight.

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28. A spatula as claimed in any preceding claim, wherein the operative edge has a width in the range 15mm to 55mm.

30 29. A spatula as claimed in Claim 28, wherein the operative edge has a width in the range 25mm to 45mm.

30. A spatula as claimed in any preceding claim, wherein the spatula is between 80mm and 150mm in length.

5 31. A spatula as claimed in Claim 30, wherein the spatula is between 100mm and 130mm in length.

32. A spatula as claimed in any preceding claim, wherein the corners of the spatula are radiussed.

10 33. A spatula as claimed in any preceding claim, wherein the operative portion arcs.

34. A spatula as claimed in Claim 33, wherein the operative portion arcs with a radius in the range 20mm to 60mm.

15 35. A spatula as claimed in Claim 34, wherein the operative portion arcs with a radius in the range 35mm to 45mm.

20 36. A spatula as claimed in any preceding claim, wherein the handle portion arcs.

37. A spatula as claimed in Claim 36, wherein the handle portion arcs with a radius in the range 60mm to 100mm.

25 38. A spatula as claimed in Claim 37, wherein the handle portion arcs with a radius in the range 75mm to 85mm.

39. A spatula as claimed in any preceding claim, wherein the operative portion and handle portion arc in opposing directions.

30 40. A spatula as claimed in any preceding claim, wherein the handle portion and operative portion are separated by a hinge.

41. A spatula as claimed in Claim 40, wherein the hinge is a lateral indentation across the width of the spatula.

5 42. A spatula as claimed in any preceding claim, wherein the handle portion includes formations that facilitate gripping of the handle portion by a user.

43. A spatula as claimed in Claim 42, wherein the formations take the form of an array of domed protrusions.

10

44. A spatula substantially as hereinbefore described and as illustrated in the accompanying Figures.



INVESTOR IN PEOPLE

Application No: GB 0302238.1  
Claims searched: 1-44

Examiner: Hal Young  
Date of search: 14 May 2003

## Patents Act 1977 : Search Report under Section 17

### Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1 at least	GB 2364502 A (RECKITT) see whole document.

### Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

### Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC<sup>v</sup>:

A4V

Worldwide search of patent documents classified in the following areas of the IPC<sup>7</sup>:

A45D, A47K, A47J

The following online and other databases have been used in the preparation of this search report:

WPI, EPODOC, JAPIO